

## **A Solution to the NID Nuisance** (plus a Bonus TIP)

### **TR February TIP-of-the-Month**

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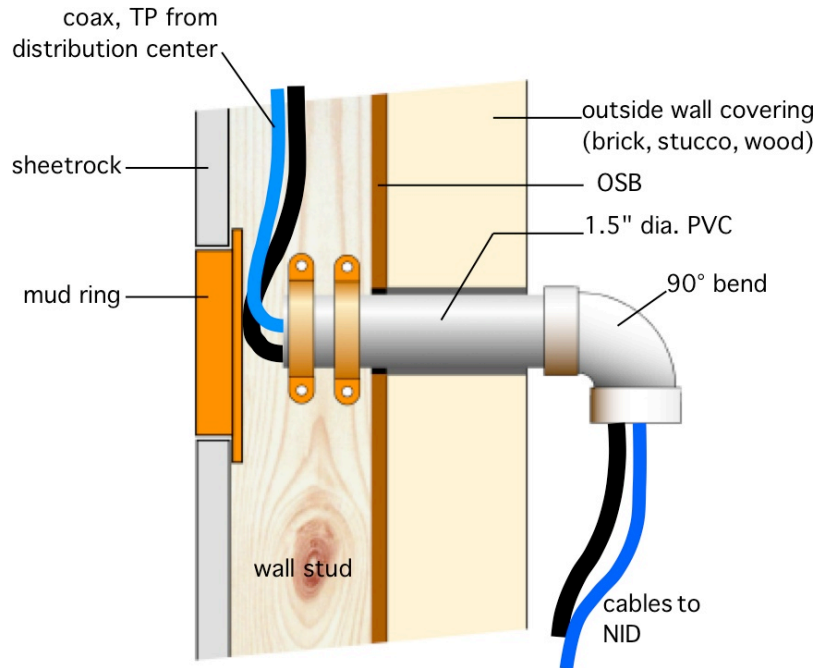
Many installers I've worked around obviously don't know a good way of terminating cabling to the NID (Network Interface Device) location. NID's are usually on the outside of the house mounted near the electrical service entrance (because they need to be near the building ground). A typical structured cabling installation needs TP cables (2 CAT5's) to the telco or cable box and 1 or 2 coax cables (2 RG6's) to the cable box from the distribution center in the home. So someplace the cable has to pass to the outside of the house. The few places in the U.S. where NID's are mounted on the inside of the house don't have this problem (if you live there, you can skip this TIP!)

I've seen many ways to get the cable through an outside wall. In areas where houses are stucco (CA, AZ, NM, FL, etc.) most installers just seem to stick the cables out the wall and the stucco crew just sort of stuccos around them. No box, no nothing. Not only does it look crummy as all-get-out, moving and pulling on the cables on the outside cracks the stucco off and leaves a hole around the cables. Yuck. And if the cable needs repairing (it got cut too short on the outside), there is no way to do it without breaking away the stucco, chicken-wire, insulation, etc.

I've also seen or tried other unsatisfactory solutions such as putting junction boxes that face the outside (like an outside outlet). The problem with this is there is no easy way to make sure the outside edge of the box is flush with the outside finished surface of the wall, and even if it was, there is no way I know to pass the wires through anything to the outside that keeps out water and doesn't look crummy.

So in this TIP, I'll pass along one solution that has worked well for me. There are two variations of this technique but they both involve securing a 1-1/2" PVC pipe through an outside wall as a conduit for the cable.

The first variation (and the one that I like best) is to secure the pipe to a wall stud with pipe clamps (see Figure 1), and then mount a "mud-ring" on the inside of the wall in front of the pipe. The conduit should stick out at least the thickness of the finished outside wall material plus an inch or so to install a 90-degree bend.

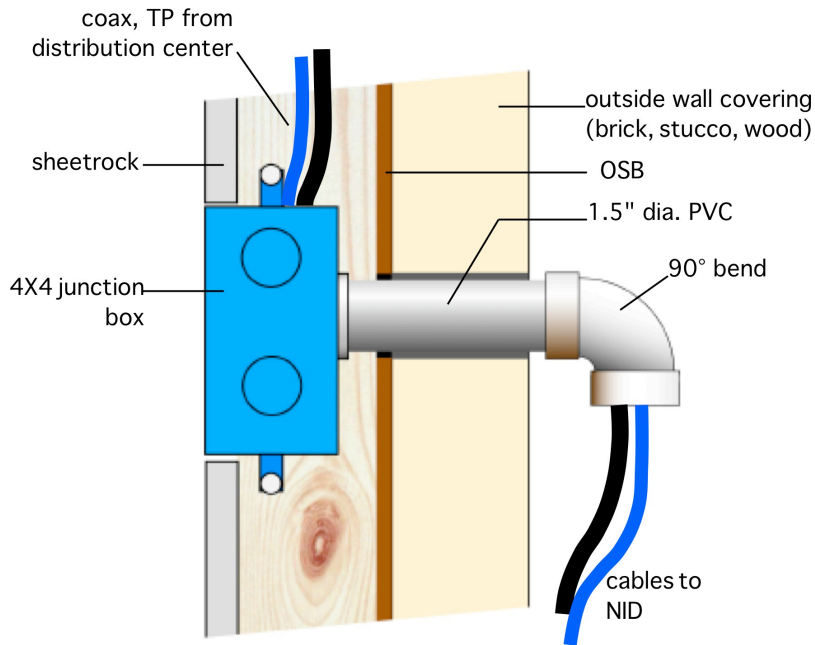


**Figure 1. Section through outside wall showing PVC pipe mounted to wall stud. This allows cables to pass easily to the outside. This version uses a mud-ring on the inside for easy access**

During prewire, cover the outside of the pipe with duct tape. When pulling the cable to this location, allow all the slack you'll need to reach the probable NID box locations and coil the cable up in the wall in such a way that you can easily get to it through the mud-ring opening.

At trim-out, remove the duct tape, retrieve the cable through the mud-ring then feed it through the pipe to the outside. Leave any excess slack in the wall. Put a 90-degree bend piece on the outside facing down. If the cables need to go up on the outside, don't forget to put a drip-loop in the cable below the 90-degree bend. Once the cables are secure on the outside, pack an inch or two of the pipe from the outside with something to keep out weather and bugs (fiberglass insulation, scrub-pad, packaging foam, etc.). Don't use that expanding insulation spray foam or anything else that gets hard. You want to be able to remove it for service.

The other variation is to use a 4X4 plastic junction box that you attach to the stud and attach the 1-1/2" PVC pipe to the junction box. You will probably need to enlarge a hole on the back of the box to take a fitting for the PVC. See Figure 2.



**Figure 2. Section through outside wall showing 4X4 junction box with PVC pipe mounted to the back. This allows cables to pass easily to the outside. This version uses a mud-ring on the inside for easy access**

If you don't need a lot of extra cable outside the wall (NID is close), you can coil the cable up in the 4X4 box at prewire and then remove it and feed it out the pipe at trim-out. I have tried doing this as well as coiling up the cable outside at prewire and putting it in a plastic bag for protection, but this didn't work very well. If the outside wall is wood siding or anything that someone needs to make a hole in to pass over the pipe, then the cable outside in a bag is very likely to get damaged.

### **BONUS TIP**

I've got a quick tip from Turkey. Over here, since everything is built from poured-in-place concrete or concrete block, all wiring is placed in conduit. But they don't use rigid PVC or metal conduit. Instead electricians use 1" flexible polyethylene tubing. It's the same black tubing you get in large rolls for yard and lawn irrigation. I never thought of using it as conduit, but I see no reason it wouldn't work great. The nice thing about it is it is very smooth on the inside. Cable slides through it very easily with nothing to hang it up. I tried it and was amazed at how easily even thick cable slides through. It is also very smooth on the outside which should make it easy to pull. You just have to



make sure not to kink it. You can make bends at about the same radius as regular flexible PVC conduit (about 6").

Another advantage is cost and availability. A brief search on the Internet turned up 500 ft. roles of 1" polyethylene tubing (the largest diameter I could find) for about \$60. This is a lot cheaper than buying flexible PVC tubing or anything else I can think of. And it is available at most irrigation supply stores. Of course there are dozens of gadgets available to splice it, secure it, cut it, and so on.

I plan on trying it out on the next install. If you get a chance to try it, let me know how you like it and I'll write it up!

*Catch you next month... Grayson*

This tip is also available at <http://hometoys.com>